ABSTRACT OF THE DISCLOSURE

A current signal, which is supplied from the secondary winding of an iron core on which the current to be measured flows through a primary winding, is integrated. The integrated current value is supplied to a measurement device or to a trigger circuit of a switching device. The integrated current value is adjusted at predetermined time intervals by determining the primary current to be measured, using a magnetic field sensor. The primary current is determined by a compensation method using the magnetic field sensor to measure the magnetic field in the iron core, and the integrated current value is corrected based upon the determined value.